

CLAIMS

1. A parallel optical interconnect for use in a fiber optic system, comprising:
2 a plurality of first segments of optical fibers extending in a side-by-side arrangement;
a first holder that maintains a plurality of first terminal portions of the first segments in a first
4 predetermined pitch;
a fiber-fan-out including a plurality of second segments of the optical fibers extending in a
6 diverging arrangement from the plurality of first segments; and
a second holder that maintains a plurality of second terminal portions of the second
8 segments in a second predetermined pitch that is greater than the first predetermined pitch.

2. The optical interconnect of Claim 1 wherein the first holder that maintains the
2 plurality of first terminal portions of the first segments in the first predetermined pitch is
ribbonizing web material.

3. The optical interconnect of Claim 1 wherein the second holder that maintains the
2 plurality of second terminal portions of the second segments in the second predetermined pitch
is a discrete body member that extends across the plurality of second segments of the optical
4 fibers.

4. The optical interconnect of Claim 1 wherein the first holder that maintains the
2 plurality of first terminal portions of the first segments in the first predetermined pitch is a discrete
body member that extends across the plurality of first segments of the optical fibers.

5. The optical interconnect of Claim 1 wherein the first holder that maintains the
2 plurality of first terminal portions of the first segments in the first predetermined pitch includes
a first discrete body member that extends across the plurality of first segments of the optical fibers
4 and the second holder that maintains the plurality of second terminal portions of the second
segments in the second predetermined pitch includes a second discrete body member that extends
6 across the plurality of second segments of the optical fibers.

6. The optical interconnect of Claim 1 wherein the first and second holders are
2 provided by a common injection molded plastic housing assembly surrounding the first and second
segments of the optical fibers except for the first and second terminal portions.

7. The optical interconnect of Claim 6 wherein the housing assembly has a plurality
2 of alignment pins that extend from at least one end thereof.

8. The optical interconnect of Claim 6 wherein each second terminal portion of each
2 of the second segments of the plurality of optical fibers has a ferrule secured around the second
terminal portion sized for being received in a receptacle in a corresponding optical subassembly
4 (OSA).

9. The optical interconnect of Claim 3 wherein the discrete body member has pre-
2 formed holes through which the second segments can be inserted.

10. The optical interconnect of Claim 4 wherein the discrete body member has pre-
2 formed holes through which the first segments can be inserted.

11. A fiber optic system, comprising:
2 a plurality of first segments of optical fibers extending in a side-by-side arrangement;
a first holder that maintains a plurality of first terminal portions of the first segments in a first
4 predetermined pitch so that the first terminal portions can each be optically coupled to a
corresponding routed optical fiber via a parallel optical connector having the first predetermined
6 pitch;
a fiber-fan-out including a plurality of second segments of the optical fibers extending in a
8 diverging arrangement from the plurality of first segments;
a second holder that maintains a plurality of second terminal portions of the second
10 segments in a second predetermined pitch that is greater than the first predetermined pitch; and
a plurality of optical subassemblies (OSAs) arranged in an array, each OSA being optically
12 coupled to a corresponding one of the second terminal portions of the second segments.

12. The fiber optic system of Claim 11 wherein the first holder that maintains the
2 plurality of first terminal portions of the first segments in the first predetermined pitch is
ribbonizing web material.

13. The fiber optic system of Claim 11 wherein the second holder that maintains the
2 plurality of second terminal portions of the second segments in the second predetermined pitch
is a discrete body member that extends across the plurality of second segments of the optical
4 fibers.

14. The fiber optic system of Claim 11 wherein the first holder that maintains the
2 plurality of first terminal portions of the first segments in the first predetermined pitch is a discrete
body member that extends across the plurality of first segments of the optical fibers.

15. The fiber optic system of Claim 11 wherein the first holder that maintains the
2 plurality of first terminal portions of the first segments in the first predetermined pitch is a first
discrete body member that extends across the plurality of first segments of the optical fibers and
4 the second holder that maintains the plurality of second terminal portions of the second segments
in the second predetermined pitch is a second discrete body member that extends across the
6 plurality of second segments of the optical fibers.

16. The fiber optic system of Claim 11 wherein the first and second holders are provided
2 by a common housing assembly surrounding the first and second segments of the optical fibers
except for the first and second terminal portions.

17. The fiber optic system of Claim 11 wherein each OSA has a receptacle for receiving
2 a corresponding second terminal portion.

18. The fiber optic system of Claim 11 wherein the second terminal portion of each of
2 the second segments of the plurality of optical fibers has a ferrule secured around the second
terminal portion that is received in a receptacle in the corresponding optical subassembly (OSA).

19. The fiber optic system of Claim 11 wherein each OSA has a groove for receiving
2 a corresponding second terminal portion.

20. A method of forming a parallel interconnect for use in a fiber optic system,
2 comprising the steps of:
providing a plurality of optical fibers;
4 forming a housing assembly with a plurality of diverging channels that extend through the
housing assembly; and
6 threading the optical fibers through corresponding channels so that a first set of terminal
portions of the optical fibers are free at the first end of the housing assembly and a second set of
8 terminal portions of the optical fibers are free at the second end of the housing assembly, the
channels being configured to maintain the first terminal portions in a first predetermined pitch and
10 to provide a fan-out pattern that maintains the second terminal portions in a second predetermined
pitch that is greater than the first predetermined pitch.